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Running Heading: Latex Induced Occupational Asthma

Key words: Occupational Asthma, Latex Allergy, Formaldehyde, Xylene, Pathology, Health care worker.

Abbreviations:

ACD: Allergic contact dermatitis

FDA: Food and Drug Administration

FEV1: Forced expiratory volume in one second

FVC: Forced vital capacity

HMW: High molecular weight

ICD: Irritant contact dermatitis

IgE: Immunoglobulin E

NIOSH: National Institute for Occupational Safety and Health

NRL: Natural rubber latex

OA: Occupational asthma

OSHA: Occupational Safety and Health Administration

PAPR: Powered air- purifying respirator

PEFR: Peak expiratory flow rate

PPE: Personal protective equipment

RADS: Reactive airways dysfunction syndrome

RAST: Radioallergoimmunoabsorbent assay

Outline:

Abstract

Case Presentation

Discussion

Latex Allergy and Sensitization

Latex induced Occupational Asthma

Role of Formaldehyde and Xylene

Treatment and Workplace Accommodation

Conclusion

Abstract

Context: Latex allergy and sensitization has been an important problem facing health care workers.

Providing a latex safe environment is the intervention of choice.

Case Presentation: A 46-year-old surgical pathologist presented with increasing shortness of breath for the previous 4 years. Twenty years prior to presentation, he noted a pruritic, erythematous rash on his hands, associated with latex glove use. Fourteen years prior to presentation, during pathology residency, he developed a non-productive cough, wheezing and an urticarial rash, temporally associated with powdered latex glove use. These symptoms improved while away from work. At presentation, he had one-flight dyspnea. Skin prick test was positive for latex and pulmonary function testing showed mild obstruction, reversible with bronchodilator. As the patient was at risk for worsening pulmonary function and possible anaphylaxis with continued exposure, he was removed from the workplace as no reasonable accommodation was made for him at that time.

Discussion: His presentation is consistent with latex induced occupational asthma. Initially noting dermal manifestations, consistent with an allergic contact dermatitis secondary to accelerators present in latex gloves, he later developed urticaria, flushing and respiratory symptoms, consistent with a type I hypersensitivity reaction to latex. He also has reversible airways disease with significant improvement of peak expiratory flow rate and symptoms, when away from work.

Relevance to Clinical or Professional Practice: The ideal treatment for latex sensitization is removal from, and avoidance of exposure. Clinicians should consider occupational asthma when patients present with new onset asthma or asthmatic symptoms that worsen at work.